

Tech Note

#102 Gain Control



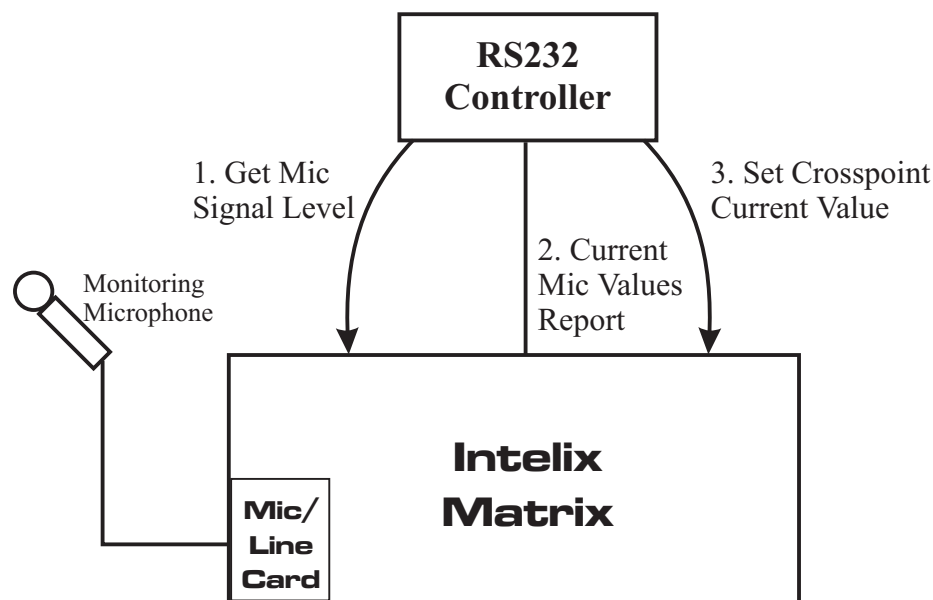
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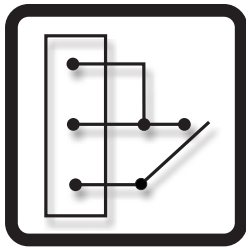
Automatic Gain Control for **intelix** Matrix Products

If your **intelix** matrix is equipped with a mic/line card, you can do automatic gain control over target crosspoints using a monitoring microphone. Your controller sends a **Get Mic Signal Level** message to the mic/line channel. The matrix responds with a **Current Mic Values Report** message. From this report, you can determine the audio level at your monitoring microphone. With this information, your controller can set the audio level at the crosspoint to be controlled.

To obtain this information, follow this sequence:

- 1) Controller queries the mic/line card for the level at the monitoring microphone (**Get Mic Signal Level**).
- 2) Controller receives and parses the resulting **Current Mic Values Report** to determine actual level at the monitoring microphone.
- 3) Controller calculates new crosspoint value for controlled target.
- 4) Controller sends crosspoint messages with new value.
- 5) Loop and repeat steps 2-4 as needed. The speed of this loop can be controlled with the polling speed parameter in the **Get Mic Signal Level** message. Step 1 will be automatically repeated at the rate set by the polling speed parameter.





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Get Mic Signal Level

Description: This message sets the rate at which an entire mic/line card reports its meter values. Any value of the polling speed parameter less than 50 causes the card to report once and then stop reporting. The card to be set is the one containing the “input” parameter. An invalid input parameter results in no action.

Message ID: 3
Source: External

Parameters:

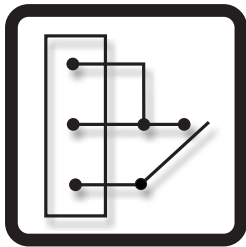
Name	Size	Range	Description
Input	1	1-128	any input on card to be queried
Polling Speed	1	0; 50-255	0 stops reporting; 50-255 is the report speed in milliseconds

Reply: Current Mic Values Report

Notes: none

Example:

RS232_START	length	data fields				Checksum
		class	message ID	input	polling speed	
FAh	00h 04h	0Bh	03h	01h	F0h, 0Fh	0Ch



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Current Mic Values Report

Description:

This message is sent by the mic/line card to report its meter values. It is a response to a **Get Mic Current Values** message. All eight channel meter values are reported starting with channel one first.

Message ID:

4

Source:

Application CPU

Parameters:

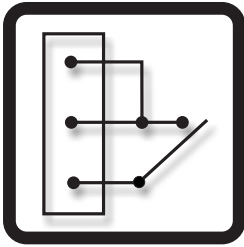
Name	Size	Range	Description
Input number	1	1, 9, 17,...	number of the first input of reporting board
Input 1-8	8	0-42	channel 1 reported first. Actual dB is (input value - 20).

Reply: none

Notes: none

Example:

RS232_START	length	data fields				Checksum
		class	message ID	input	polling speed	
FAh	00h 0Bh	0Bh	04h	01h	[8 hex bytes]	??h



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Current Mic Values Report, cont.

This table shows the correspondence of input level parameters to actual *post-gain* channel levels. To convert the input level parameter to dB, subtract 20 (14h). Not that the first and last hex values do not correspond to specific dB levels. Rather, they indicate “out of bounds” conditions.

Hex Value	Decimal Value	Post-Gain dB Value
00h	0	less than -19 dB
01h	1	-19 dB
02h	2	-18 dB
...
13h	19	-1 dB
14h	20	+0
15h	21	+1 dB
...
29h	41	+21 dB
2Ah	42	greater than +21 dB